



# UNITED STATES PATENT AND TRADEMARK OFFICE

A7

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/616,514	07/09/2003	Angela Petroski	4001527.0008	1783
7590	02/25/2005		EXAMINER	
			OJINI, EZIAMARA ANTHONY	
			ART UNIT	PAPER NUMBER
			3723	
DATE MAILED: 02/25/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/616,514	PETROSKI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Anthony Ojini	3723	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 09 July 2003.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-3,6-8 and 10-15 is/are rejected.
- 7) Claim(s) 4,5 and 9 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 July 2003 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/30/03.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 13-15 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 13, line 8, the term "step (a)" should be replaced with the exact limitation.

In claim 14, lines 3, 5, the terms "step (a)" and "step (c)" should be replace with the exact limitation.

In claim 15, lines 4, 5, 7, the term "step (a)", "step (e)" and "step (b)" should be replace with the exact limitation.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3,6-8,10-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Applicant Admitted Prior Art (AAPA)** in view of **Armstrong (3,346,904)**.

**With respect to claims 1,8,10,** AAPA discloses a CMP apparatus comprising polishing pad (10) having a working-surface section and a nonworking surface section, a platen

(13) for holding the polishing pad and means for securing the polishing pad to the platen.

**AAPA** fails to disclose the means for securing the polishing pad to the platen include a flexible resilient hook and loop fastening means having a first portion attached to the polishing pad and a second portion attached to the platen for mating with the first portion.

**Armstrong** discloses a means for securing a polishing pad (14) to the platen (10) that include a hook and loop fastening means (13,16) having a first portion attached to the polishing pad and a second portion attached to the platen for mating with the first portion (see fig. 4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of the AAPA with hook and loop fastening means in view of Armstrong so as to quickly detach worn out pad from the apparatus.

**With respect to claims 2,3,6,11,12,** AAPA fails to discloses to wherein said polishing pad comprises a nonporous polishing pad; a thermoplastic boundary layer on the nonworking-surface section; said means for securing comprising first adhesive means on said nonworking-surface section of said polishing pad for attaching said first portion to said polishing pad, and second adhesive means on said platen for attaching said second portion to said platen.

**Armstrong** discloses a nonporous polishing pad and a thermoplastic boundary layer (15) on the nonworking-surface section (see col. 3, line 49); means for securing comprising first adhesive means on said nonworking-surface section of said polishing

pad for attaching said first portion to said polishing pad (see col. 3, lines 26-28) and second adhesive means on said platen for attaching said second portion to said platen (see col. 2, lines 64-68).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of the AAPA with adhesive means attached to polishing pad and platen in view of Armstrong so as to firmly attached the hook and loop fastening means on the polishing pad and the platen.

**With respect to claim 7**, AAPA disclose a pressure-sensitive adhesive layer that have substantially thickness but fails to teach thickness of between 0.025-0.050mm.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of AAPA with a pressure-sensitive adhesive layer that have a thickness of between 0.025-0.050mm **so as to ensure high torsional holding power**, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

**With respect to claims 13-15**, AAPA fails to disclose a method of securing a polishing pad to a platen of a CMP apparatus, the polishing pad having a working-surface section and a nonworking-surface section, the polishing pad comprising a first portion of a hook-and-pile fastening means attached to the nonworking- surface section, and the platen comprising a pad-supporting surface having a second, mating portion of the hook-and-pile fastening means, said method comprising the following steps: removably attaching the nonworking-surface section of the polishing pad to the pad-supporting surface of the

platen; attaching the first portion of the hook-and-pile fastening means to the second portion of the hook-and-pile fastening means; removing the polishing pad from the platen when the polishing pad has become worn; and peeling the first portion of the hook-and-pile fastening means from the second portion of the hook-and-pile fastening means; removably attaching the nonworking-surface section of another, new said polishing pad to the pad-supporting surface of the platen; and attaching the first portion of the hook-and-pile fastening means of the nonworking-surface section thereof to said second portion of the hook-and-pile fastening means.

**Armstrong** discloses a method of securing a polishing pad to a platen apparatus, the polishing pad having a working-surface section and a nonworking-surface section, the polishing pad comprising a first portion of a hook-and-pile fastening means attached to the nonworking- surface section, and the platen comprising a pad-supporting surface having a second, mating portion of the hook-and-pile fastening means, said method comprising the following steps: removably attaching the nonworking-surface section of the polishing pad to the pad-supporting surface of the platen; attaching the first portion of the hook-and-pile fastening means to the second portion of the hook-and-pile fastening means; removing the polishing pad from the platen when the polishing pad has become worn; and peeling the first portion of the hook-and-pile fastening means from the second portion of the hook-and-pile fastening means; removably attaching the nonworking-surface section of another, new said polishing pad to the pad-supporting surface of the platen; and attaching the first portion of the hook-and-pile fastening

means of the nonworking-surface section thereof to said second portion of the hook-and-pile fastening means (see col. 1, lines 10-52 & figs. 1,3,4).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide apparatus of the AAPA with hook and loop fastening means in view of Armstrong so as to quickly detach worn out pad from the apparatus.

### ***Allowable Subject Matter***

Claims 4,5,9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the art of record considered as a whole, alone or in combination, neither anticipates nor renders obvious hook-and-pile fastening means having shear strength in the range of 50-250 kPa, and peel strength in the range of 02-0.6 N/m.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Lampert, Martin et al., Takizawa et al. disclose fastening means having hook and loop. Christian disclose fibrous abrasive pad having hook-holding means.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Ojini whose telephone number is 571 272

4492. The examiner can normally be reached on 7 to 4 Tuesday-Friday with every other Monday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Hail can be reached on 571 272 4485. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Joseph J. Hail, III  
Supervisory Patent Examiner  
Technology Center 3700